

COLE SPRINGER

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EDUCATION

University of Illinois Springfield | M.S. Data Analytics, GPA: 4.0 **Expected 12/2026**

- Relevant Coursework: Introduction to Machine Learning, Deep Learning, Big Data Analytics, Statistical Computation, Advanced Database Concepts, and NoSQL Databases.

University of Southern Mississippi | B.S. Mathematics, GPA: 3.7 **05/2021**

PROFESSIONAL EXPERIENCE

SGS North America | Columbus IN, USA **08/2022 – 12/2023**

Software Engineer (Full Time, 40 hrs/week)

- Developed a Java REST API to extract information from customer application queries and inject relevant processed inputs from an internal calculation engine.
- Designed and deployed a customer-facing database application to ensure federal regulatory compliance regarding the consistency of carbon and energy content in fuel samples.
- Migrated legacy data transmission protocols (CORBA) to gRPC, significantly improving the scalability and maintainability of API connections.
- Updated and maintained SQL tables to satisfy evolving customer reporting requirements and ensure data integrity.
- Created unit tests to verify code reliability.

PROJECTS

Brain Tumor MRI Classification | University of Illinois Springfield **05/2026**

- Built a hybrid Convolutional Neural Network and Vision Transformer (CNN-ViT) model in PyTorch for a four class brain tumor MRI classification using the Kaggle Brain Tumor MRI dataset.
- Created an image preprocessing and evaluation pipeline with grayscale conversion, normalization, train/validation/test splitting, Optuna hyperparameter tuning, and baseline comparisons against CNN and ViT models.
- Achieved 93% test accuracy and 93% F1 score, outperforming CNN and ViT baselines while generating class specific evidence maps to evaluate model interpretability and identify limitations in explanation reliability.

Fake Job Posting Detection | University of Illinois Springfield **12/2025**

- Developed a multi-input Neural Network model using Keras and Word2Vec embeddings to detect fraudulent job listings within the EMSCAD dataset.
- Implemented text vectorization for multiple description fields and utilized class weighting to successfully handle severe dataset imbalance (5% fraud rate).
- Achieved 86% Precision and 76% Recall, significantly outperforming a Naive Bayes baseline (24% Precision) and validating the model's viability for sensitive fraud detection tasks.

SKILLS

- **Languages:** R, Python, Java, SQL (Oracle, SQLite), Bash.
- **Data Science:** Deep Learning, Machine Learning, Computer Vision, CNNs, Vision Transformers, NLP, Apache Spark, Apache Hadoop, Statistical Analysis, Data Cleaning.
- **Frameworks & Tools:** Docker, Linux, Tidyverse, NumPy, Pandas, Keras, PyTorch, Optuna, Spring Boot, Hibernate, gRPC, React, Git, Azure DevOps.

CERTIFICATES

- Google Data Analytics (2022)